

DEPARTMENT OF THE ARMY

HEADQUARTERS US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND 5001 EISENHOWER AVENUE. ALEXANDRIA, VA. 22333

RECEIVED

DRCSF-P

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20 May 1980

U.S. ENCLEAR REG. OCCUPATION NMSS MALL SECTION

Director

Nuclear Material Safety and Safeguards ATTN: Radioisotopes Licensing Branch US Nuclear Regulatory Commission Washington, DC 20555

1.14

Ref: NRC Source Material License Numberr SMB-1300

Gentlemen:

2 Incl

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Forwarded is a request from US Army Communications and Electronics Materiel Readiness Command for exemption from the requirements of Title 10, Code of Federal Regulations (10 CFR), Part 21 of US Nuclear Regulatory Commission (NRC) Regulation, for your review and approval.

Because the specific use of radioactive material will not endanger life or property or the common defense or security, we recommend granting the request.

Please acknowledge receipt of correspondence on inclosed DA Form 209.

DARWIN N. TARAS

Chief, Health Physics Safety Office

CF: HQDA (DASG-PSP-E) WASH DC 20310 Dir, DARCOM FSA, Charlestown, IN 47111



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DEPARTMENT OF THE ARMY

HEADQUARTERS US ARMY COMMUNICATIONS AND ELECTRONICS MATERIEL READINESS COMMAND AND FORT MONMOUTH FORT MONMOUTH, NEW JERSEY 07703

REPLY TO ATTENTION OF

DRSEL-SF-H

29 APR 1980

SUBJECT: Title 10, Code of Federal Regulations (10 CFR), Part 21 of US Nuclear Regulatory Commission Regulations

Commander US Army Materiel Development and Readiness Command ATTN: DRCSF-P 5001 Eisenhower Avenue Alexandria, Virginia 22333

1. Reference is made to:

a. Paragraph 21.7 of subject regulations entitled Exemptions.

b. NRC Source Material License Number SMB-1300.

c, 42 FR 61853, Final Rulemaking, 10 CFR Part 40.

2. Reference la states, in part, that exemptions from the requirements of subject regulations may be granted upon request should it be determined that the specific use of radioactive material will not endanger life or property or the common defense and security.

3232 Reference 1b authorizes the receipt, possession, use and transfer of Thorium Fluoride in multi-layer anti-reflective lens coatings on thermal imaging lenses of the Forward Looking Infra Red (FLIR) imaging systems. Amendment Number 3 to reference 1b includes the maximum activity for FLIR systems and subsystems.

4. The potential radiation hazards associated with FLIR systems and subsystems is negligible, if any. The hazards associated with ²³²Thorium are the ingestion into the body and retention in the critical organ, i.e., bone. Assuming the worst possible case, if an individual were to premeditatedly ingest a FLIR subsystem incorporating the maximum quantity of ²³²Thorium contained in any of the FLIR subsystems, i.e., 81 nanocuries, which is highly unlikely as well as physically impossible, using ICRP 2 data, the maximum activity deposited to the bone is approximately 6 picocuries and the maximum activity to the whole body of 8 picocuries is obtained. This compares to the maximum permissible body burden for ²³²Thorium of 40 nanocuries to the whole body based on the bone being exposed as the critical organ.

29 APR 1980

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5. Reference 1c incorporated the use of FLIR systems by Federal governmental agencies under paragraph 40.22 of 10 CFR Part 40 entitled Small Quantities of Source Material which states, in part, that "...persons who receive, possess, use, or transfer source material pursuant to the general license issued in this section are exempt from the provisions of Parts 19, 20 and 21 of this chapter...".

6. Based upon the above, the use of FLIR systems will not provide a radiological safety hazard to the individual users and will not endanger the life or property or the common defense and security.

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7. Request this letter be forwarded to the NRC for their review and evaluation for an exemption from the requirements of subject regulations in accordance with paragraph 21.7 of subject regulations.

FOR THE COMMANDER:

Bm Savarko

BERNARD M. SAVAIKO Chief, Safety Office

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22 Máy 1980

U.S. MUCLEAR REG. COMMISSION NMSS MAIL SECTION

Director

Nuclear Material Safety and Safeguards ATTN: Radioisotopes Licensing Branch US Nuclear Regulatory Commission Washington, DC 20555

Ref: Source Material License No. SUB-1150

Gentlemen:

Forwarded is a request from US Army Communications and Electronics Materiel Readiness Command for exemption from the requirements of Title 10, Code of Federal Regulations (10 CFR), Part 21 of US Nuclear Regulatory Commission (NRC) Regulation, for your review and approval.

Because the specific use of radioactive material will not endanger life or property or the common defense or security, we recommend granting the request.

Please acknowledge receipt of correspondence on enclosed DA Form 209.

DARWIN N. TARAS

2 Incl as

Chief, Health Physics Safety Office

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DEPARTMENT OF THE ARMY HEADQUARTERS US ARMY COMMUNICATIONS AND ELECTRONICS MATERIEL READINESS COMMAND AND FORT MONMOUTH FORT MONMOUTH, NEW JERSEY 07703

ATTENTION OF

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SUBJECT: Title 10, Code of Federal Regulations (10 CFR), Part 21 of US Nuclear Regulatory Commission (NRC) Regulations

Commander US Army Materiel Development and Readiness Command ATTN: DRCSF-P 5001 Eisenhower Avenue Alexandria, Virginia 22333

1. Reference is made to:

a. Paragraph 21.7 of subject regulations entitled Exemptions.

b. NRC Source Material License Number SUB-1150.

2. Reference la states, in part, that exemptions from the requirements of subject regulations may be granted upon request should it be determined that the specific use of radioactive material will not endanger life or property or the common defense and security.

3. Reference 1b authorizes the receipt, possession, use and transfer of the Eberline Instrument Corporation (EIC) Model CS-12 Radioactive Test Sample incorporating 20 nanocuries of Thorium used to check the functional operation of the AN/PDR-54 and AN/PDR-60 standard Army alpha detection instruments and the Nuclear Research Coporation (NRCO) Part Number B-1093 Radioactive Test Sample incorporating approximately 235 nanocuries of metallic ²³²Thorium used to check the functional operation of the AN/PDR-56F standard Army alpha detection instruments.

4. The EIC Model CS-12 Radioactive Test Sample contains 230 Thorium electroplated on an 0.875 inch diameter steel disk which, in turn, is epoxyed into a two inch diameter plastic disk. The NRCO Part Number B-1093 Radioactive Test Sample is metallic (99.99 percent) 232 Thorium which is rolled and extruded into sheet form, 2.25 inch by 0.515 inch by 0.010 inch in dimension and weighs approximately 2.15 grams, and is bonded to the underside of the AN/PDR-56F instrument.

5. The potential radiation hazards associated with these sources are negligible, if any. The hazards associated with Thorium are the ingestion into the body

DRSEL-SF-H SUBJECT: Title 10, Code of Federal Regulations (10 CFR), Part 21 of US Nuclear Regulatory Commission (NRC) Regulations

and retention in the critical organ, i.e., bone. Assuming the worst possible case, if an individual were to premeditatedly ingest the entire NRCO Thorium test sample, which is highly unlikely as well as physically impossible, using ICRP 2 data, the maximum activity deposited to the bone is approximately 17 picocuries and the maximum activity to the whole body of 24 picocuries is obtained. This compares to the maximum permissible body burden for ²³²Thorium of 40 nanocuries to the whole body based on the bone being exposed as the critical organ.

6. Based upon the above, the use of the EIC Model CS-12 and NRCO Part Number B-1093 Radioactive Test Samples will not provide a radiological safety hazard to the individual users and will not endanger the life or property or the common defense and security.

7. Request this letter be forwarded to the NRC for their review and evaluation for an exemption from the requirements of subject regulations in accordance with paragraph 21.7 of subject regulations.

FOR THE COMMANDER:

Bm Savailo

BERNARD M. SAVAIKO Chief, Safety Office

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